

**STATEMENT OF THE LEGAL AND FACTUAL BASIS**  
**FOR THE TERMS OF THE PROPOSED PERMIT**  
**[MDAQMD Rule 1203(B)(1)(a)(i)]**

TITLE V FEDERAL PERMIT TO OPERATE  
Facility named; USMC YERMO FACILITY

Federal Operating Permit # 08700587

Issued: July 08, 2002

Processing Engineer:

William Weese  
Air Quality Engineer

A. FACILITY IDENTIFYING INFORMATION:

Owner/Company Name: United States Marine Corps

Owner Mailing Address: COMMANDING OFFICER  
Attn: S. Knutson  
ENVIRONMENTAL  
Box 110570  
Barstow, CA. 92311-5050

Facility Name: USMC Yermo Annex

Facility Location: USMC Logistics Base, Barstow CA

MDAQMD Federal Operating Permit Number: 08700587

MDAQMD Company Number: 0087

MDAQMD Facility Number: 00587

Responsible Official: I. E. BERGMAN, Colonel USMC  
Title: Commanding Officer  
Phone Number: (760) 577-6555

Facility "Site" Contacts: Ms. Suzy Knutson  
Title: MCLB Air Compliance Program Manager  
Phone Number: 760-577-6413

Nature of Business: National Security

SIC Code: 9711

Facility Location: Barstow, California

**STATEMENT OF THE LEGAL AND FACTUAL BASIS FOR THE TERMS  
OF THE PROPOSED PERMIT [1203(B)(1)(a)(i)]**

Statutory and Regulatory Authorities: Pursuant MDAQMD Regulation 12, Program - Federal Operating Permits, a.k.a. Title V (Adopted 7/25/94, Amended 02/22/95, Additional Rules adopted 06/28/95, 7/31/95) and 02/05/96 FR 4217 (Interim Approval), in accordance with Rule 221 - *Federal Operating Permit Requirement*, 40 CFR 52.220(c)(216)(i)(A)(2) - 02/05/96 61 FR 4217 of the Clean Air Act of 1990, the Mojave Desert Air Quality Management District issues this permit.

Federal Operating Permit (FOP number: 08700587) for USMC Yermo Annex. USMC YERMO ANNEX is a National Security Facility (SIC Code 9711) located at USMC Logistics Base, Barstow CA.

The USMC YERMO ANNEX, Title V Federal Operating Permit # 08700587, was developed by consulting District Permit conditions for existing equipment, and SIP Rule and NSPS requirements for Federal Rules, applicable to the facility. In addition, the MDAQMD Title V Program Rules, having received Final Program Approval from the USEPA, were also consulted.

**I. BACKGROUND:**

The Federal Clean Air Act Amendments of 1990 established a nation-wide permit to operate program commonly known as "Title V". MDAQMD adopted Regulation XII [Rules 1200 - 1210] and Rule 221 - *Federal Operating Permit Requirement*; [Version in SIP = Current, 40 CFR 52.220(c)(216)(i)(A)(2) - 02/05/96 61 FR 4217], to implement the Federal Operating Permit, and received Final Program Approval from EPA.

Federal Operating Permit (FOP number: 08700587) for USMC YERMO ANNEX located at USMC Logistics Base, Barstow CA. This *Statement of Legal and Factual Basis*, pursuant to Rule 1203(B)(1)(a)(i), is intended to assess the adequacy of this Title V Application and to explain the District's basis in composing the Title V - Federal Operating Permit for USMC YERMO ANNEX. USMC YERMO ANNEX - Title V Federal Operating Permit application received on March 5, 1997 met the Part 70 application deadline of March 6, 1997 for MDAQMD facilities [NOTE: all MDAQMD facilities subject to Title V were required to submit Title V applications by March 6, 1997].

The facilities Title V Permit Application was reviewed and subsequently determined complete, as indicated by the District's letter [Attachment A] to Marine Corps Logistics Base, Barstow / Yermo Annex Facility, dated April 29, 1997.

The District's approach to the Title V program is to issue a single Federal Operating Permit for the entire facility that satisfies the federal requirement for a permit under Rule 221 [NOTE: *MDAQMD maintains separate Title V and District permits programs*]. All Federal, State and most District only requirements, associated with the emission of air contaminants, are included in the Federal Operating Permit. All documents, which are not readily available to the public,

and are necessary to support the permit, are to be included. The District has taken the approach that the following documents are readily available to the public, and therefore, are not included: *Code of Federal Regulations, California Code of Regulations and Health and Safety Code, District Rules and Regulations [both documents are current and appear in the California State Implementation Plan], the continuous emission monitoring system quality assurance and monitoring plans [available at USMC YERMO ANNEX, and the District's office], all test methods, copies of District Authorities to Construct and Permits to Operate [available at the District's office].*

The USEPA, Region 9 was e-mailed a draft of the proposed permit on May 20, 2002 [a hard copy was mailed May 20, 2002]. The USEPA statutory 45-day review period will expire on 07/03/2002. The 30 day Public Notice was published on May 20, 2002 and ends on June 18, 2002.

**Rule 1203 (D)(1) outlines Title V Permit content requirements as follows:**

**II. TITLE V PERMIT CONTENTS [Rule 1203 (D)(1)]:**

All Federal Operating Permits shall contain, at a minimum, the following terms, and conditions:

A. Identification of Applicable Requirements:

1. Standard conditions for generally applicable requirements do not list those processes to which they apply as allowed by EPA's White Paper One, page 11, section 4, last sentence of paragraph 2.
2. Minor New Source Review (NSR). All existing permit conditions, which are based on previous authority to construct conditions, are considered applicable federal requirements because those pre-construction review actions resulted from SIP Rule 203 - *Permit to Operate* and SIP Rule 204 - *Permit Conditions*.
3. Federal Applicable/Enforceable Requirements:  
District Rule 1201 (P): "Federally Enforceable" - Any requirement, condition or other term which is fully enforceable by USEPA pursuant to the provisions of 42 U.S.C. §7413 (Federal Clean Air Act §113) or the public pursuant to the provisions of 42 U.S.C. §7604 (Federal Clean Air Act §304).  
District Rule 1201 (G): "Applicable Requirement" - Any of the following requirements, including requirements that have been promulgated or approved by USEPA through rulemaking at the time of permit issuance but have future effective dates, as they apply to a Facility or Permit Unit:
  - (a) Any standard or other requirement contained in the applicable implementation plan for the District, and any amendments thereto, approved or promulgated pursuant to the provisions of Title I of the Federal Clean Air Act (42 U.S.C. §§7401-7515).
  - (b) Any term or condition of any preconstruction permit issued pursuant to regulations approved or promulgated under Title I of the Federal Clean Air Act (42 U.S.C. §§7401-7515).
  - (c) Any standard or other requirement under 42 U.S.C. §§7411, Standards of Performance for New Stationary Sources (Federal Clean Air Act §111); 42 U.S.C. §7412, Hazardous Air Pollutants (Federal Clean Air Act §112); and any regulations promulgated thereunder.
  - (d) Any standard or other requirement under Title IV of the Federal Clean Air Act (42 U.S.C. §§7651-7651o) or the regulations promulgated thereunder.
  - (e) Any requirements regarding monitoring, analysis, and compliance established pursuant to 42 U.S.C. §7414(a)(3), Record keeping, Inspections, Monitoring and Entry (Federal Clean Air Act §114); 42 U.S.C. §7661c(b), Permit Requirements and Conditions (Federal Clean Air Act §504); and the regulations promulgated thereunder.
  - (f) Any standard or other requirement governing Solid Waste Incineration Units under 42 U.S.C. §7429, Solid Waste Combustion (Federal Clean Air Act §129) and the regulations promulgated thereunder.

- (g) Any standard or other requirement for consumer or commercial products under 42 U.S.C. §7511b(e) (Federal Clean Air Act §183) and the regulations promulgated thereunder.
  - (h) Any standard or other requirement of the regulations promulgated under Title VI of the Federal Clean Air Act (42 U.S.C. §§7671-7671q) unless the USEPA has determined that such requirement need not be contained in a Federal Operating Permit.
  - (i) Any national ambient air quality standard or increment or visibility requirement under part C of Title I of the Federal Clean Air Act (42 U.S.C. §§7401-7515), but only as it would apply to temporary sources pursuant to the provisions of 42 U.S.C. 7661c(e) (Federal Clean Air Act §504(e).
4. USMC YERMO ANNEX Title V Application and those requirements included in the proposed Title V Permit were evaluated. See the following discussions below:
- 40 CFR Part 61, Subpart M - National Emission Standard for Asbestos  
This facility on an as needed basis is subject to Section 61.145 through 61.147 - standards for the demolition and renovation of asbestos. Historically, the facility has been in compliance with the requirements of these standards. Appropriate conditions have been included on the permit to ensure compliance with these requirements.
- 40 CFR Part 82 - Protection of Stratospheric Ozone  
This facility is in compliance with the requirements of this part. Any servicing of air conditioners is performed by a qualified contracting company. An appropriate condition has been included on the permit to ensure continued compliance with these requirements.
- 40 CFR, Parts 60.7, 60.8 and 60.13; Subpart A - New Source Performance Standards, General Provisions  
All facility equipment is not subject to the requirements of this part because the facility/equipment either started construction/reconstruction before the respective applicability dates or otherwise do not meet applicability requirements.
- C. Emissions limitations and/or standards, including operational limitations, which assure compliance with all Applicable Requirements and a reference to the origin and authority of each term or condition contained in the Federal Operating Permit: **COMPLETED**
- D. Monitoring requirements including but not limited to: [40 CFR 70.6(a)(1)] [see following] : **COMPLETED**
- (i) All emissions monitoring and analysis methods required by an Applicable Requirement.
  - (ii) Periodic monitoring, testing or record keeping (including test methods sufficient to yield reliable data) to determine compliance with an Applicable Requirement that does not directly require such monitoring.
  - (iii) Necessary requirements concerning use and maintenance of equipment including

the installation and maintenance of monitoring equipment.

- E. Other - USMC YERMO ANNEX - Facility Support Equipment including boilers:  
(No NSPS, NESHAPS or MACT apply to this equipment or the USMC YERMO ANNEX)
- a. Boilers were constructed before the applicability date of June 9, 1989 for 40 CFR 60.40c (three - 32 MM Btu/hr units, MDAQMD permit #s B000935, 936, 937).
  - b. No MACT has been proposed or the total toxic emissions are less than the applicability threshold of 10 tons per year total HAPs. Federally enforceable HAP emission limits and recordkeeping requirements are in the proposed T5 permit to limit HAP emissions below the applicability threshold.
- F. Record keeping requirements, where applicable, including but not limited to: [see following] **All COMPLETED**
- (i) Records of required monitoring information including dates and times of sampling, operating conditions at the time of sampling, date of analysis, analytical techniques and methods, the person or company performing the analysis, and the results of the analysis.
  - (ii) The retention of all records for a period of at least five (5) years from the date of monitoring.
- G. Reporting requirements, where applicable, including but not limited to: [see following] **All COMPLETED**
- (i) Submittal of any required monitoring reports at least every six (6) months.
  - (ii) Prompt reporting of all deviations from permit requirements including those attributable to breakdown conditions. Prompt reporting shall be determined in compliance with District Rule 430.
- H. Various Standardized Provisions and/or Conditions: [see following] **All COMPLETED**
- (i) A severability clause.
  - (ii) A provision that states that the permit holder shall comply with all conditions of the Federal Operating Permit. Any noncompliance constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; the termination, revocation and reissuance, or modification of the Federal Operating Permit; and/or grounds for denial of a renewal application.
  - (iii) A provision which states that the need to halt or reduce activity to maintain compliance with the provisions of the Federal Operating Permit, or for any other reason, is not a defense in an enforcement action.
  - (iv) A provisions that states that the Federal Operating Permit may be modified, revoked, reopened, reissued or terminated for cause.
  - (v) A provision which states that the filing of an application for modification; a request for revocation and re-issuance, or termination; or notifications of planned changes, or anticipated noncompliance does not stay any condition of the Federal Operating Permit.

- (vi) A provision that states that the permit does not convey any property rights of any sort, or any exclusive privilege.
- (vii) A provision which states that the Permit holder shall furnish to the District, within a reasonable time as specified by the District, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, terminating or determining compliance with the Federal Operating Permit.
- (viii) A provision that states that the Permit holder shall, upon request, furnish to the District copies of records required to be kept pursuant to conditions of the Federal Operating Permit.
- (ix) A provision requiring the payment of annual permit renewal fees and other applicable fees as prescribed in District Rule 312.
- (x) A provision stating that no permit revision shall be required under any approved economic incentives, marketable permits, emissions trading or other similar programs provided for in the permit.
- (xi) Terms and conditions, if applicable, for reasonably anticipated operating scenarios identified by the Facility in its application which require the Facility, contemporaneously with making the change from one operating scenario to another, to record in a log at the Facility a record of the scenario under which it is operating; and ensure that each alternative operating scenario meets all Applicable Requirements.
- (xii) Terms and conditions, if requested by the applicant, for the trading of emissions increases and decreases within the Facility to the extent any Applicable Requirements allow for such trading without case-by-case approval. Such terms conditions shall include all terms and conditions to determine compliance with all Applicable Requirements; and meet all Applicable Requirements.

I. Compliance Conditions: [see following] **All COMPLETED**

- (i) Inspection and entry requirements which require that the Permit Holder allow an authorized representative of the District to enter upon the Permit holder's premises, at reasonable times.
- (ii) Provisions that allow an authorized representative of the District to have access to and copy any records that must be kept under conditions of the Federal Operating Permit.
- (iii) Provisions that allow an authorized representative of the District to inspect any Permit Unit, equipment, practice, or operation regulated or required under the Federal Operating Permit.
- (iv) Provisions which allow an authorized representative of the District to sample or monitor substances or parameters for the purpose of assuring compliance with the Federal Operating Permits or with any Applicable Requirement.
- (v) A Compliance Plan.
- (vi) A restatement, if applicable, of the requirement that the Permit holder submit progress reports at least semiannually pursuant to a schedule of compliance. Such progress reports shall comply with the provisions of District Rule 1201(I)(3)(iii).



- (vii) Certification requirements including the frequency of submission, not less than annually, for Compliance Certifications.
- (viii) Requirements that methods for monitoring compliance be included in the Compliance Certifications.
- (ix) Requirements that all Compliance Certifications be contemporaneously submitted to USEPA.
- (x) Any additional certification requirements as specified in 42 U.S.C §7414(a)(3), Recordkeeping Inspections Monitoring and Entry (Federal Clean Air Act §114(a)(3)) and 42 U.S.C. §7661c(b), Permit Requirements and Conditions (Federal Clean Air Act §503(b)) or in regulations promulgated thereunder.

J. Fugitive Emissions: **COMPLETED**

- (i) Fugitive emissions shall be included in the permit and permit conditions in the same manner as stack emissions.

### **III. CONCLUSIONS AND RECOMMENDATION:**

In conclusion, the proposed **USMC YERMO ANNEX - Title V Permit** has been found to satisfy all of the requirements of District Rule 221, Rule 312, Regulation XII Rules, and the District's Title V Permit Program requirements.

***Therefore, it is recommended that this Title V - Federal Operating Permit be issued to satisfy these requirements on July 8, 2002.***

*The proposed draft USMC YERMO ANNEX - Title V Permit & the proposed Statement of Basis documents was electronically e-mailed on May 20, 2002 [hardcopy mailed May 20, 2002] to Mr. Roger Kohn, U.S. EPA Region 9; sent to:*

*[Kohn.Roger@epamail.epa.gov]*

Roger Kohn

USEPA - Air Division (AIR-3)

75 Hawthorne Street

San Francisco, CA 94105-3901

## **APPENDIX “A”**

### **DISTRICT / SIP RULE COMPLIANCE DEMONSTRATIONS:**

- A. Rule 406: Owner/Operator shall not discharge into the atmosphere from this facility, from any single source of emissions whatsoever, Sulfur compounds, which would exist as a liquid or gas at standard conditions, calculated as sulfur dioxide (SO<sub>2</sub>) greater than or equal to 500 ppm by volume.

*[40 CFR 70.6 (a)(1) - Periodic Monitoring Requirements] (for Periodic Monitoring Requirements, see: Part II, section A, condition 22; Part III, section C, conditions 11 and 22; Part V, section C, condition 4; Part V, section D, condition 3; Part V, section I, condition 3)*

*[Rule 406 - Specific Contaminants; Version in SIP = 07/25/77, 40 CFR 52.220(c)(42)(xiii)(A) - 12/21/78 43 FR 52489, Subpart (a) only; Current Rule Version = 02/20/79]*

Rule 406 specifies standard conditions, but not dry. Standard conditions for Rule 406 will be calculated as wet.

#### **Calculate the SO<sub>2</sub> concentration in the diesel fueled IC engine exhaust gas using the following assumptions/calculations:**

1. Maximum sulfur content of the diesel fuel is by permit condition: 0.05 % by weight.
2. Specific gravity of diesel fuel is 0.84: weight of one gallon of diesel fuel is: 8.33 lb/gal x 0.84 = 7 lb/gal.
3. Heating value of diesel fuel from U.S. EPA AP-42, Section 3.3: 19,300 Btu/lb.
4. Gallons of fuel required for 10<sup>6</sup> Btu: 1 lb/19,300 Btu = x lb/ 10<sup>6</sup> Btu: x = 51.8 lb: (51.8 lb)(1 gal/7 lb) = 7.4 gallons per 10<sup>6</sup> Btu.
5. Pounds of sulfur per 10<sup>6</sup> Btu (7.4 gallons): (7.4 gal)(7 lb/gal)(0.0005) = 0.0259 pounds.
6. Mols of sulfur per 10<sup>6</sup> Btu: 0.0259 lb/ 32 lb/mol = 8.09 x 10<sup>-4</sup> mols.
7. Volume of SO<sub>2</sub> produced; assuming that one mol of sulfur produces one mol of SO<sub>2</sub>; 8.09 x 10<sup>-4</sup> mols of SO<sub>2</sub> are produced per 10<sup>6</sup> Btu of diesel burned: (385 ft<sup>3</sup> / mol)(8.09 x 10<sup>-4</sup> mols) = 0.312 ft<sup>3</sup>: (385 ft<sup>3</sup>/mol is at 68 degrees Fahrenheit).
8. From 40 CFR 60, Appendix A, Method 19 the F<sub>w</sub> factor for diesel is 10,320 wscf / 10<sup>6</sup> Btu (68 degrees Fahrenheit, 0 % excess O<sub>2</sub>). Rule 406 specifies the SO<sub>2</sub> concentration at standard conditions, wet, not dry.

For purposes of this calculation, excess air from the combustion process will not be considered in calculating the SO<sub>2</sub> concentration & is the most conservative assumption:

Concentration of SO<sub>2</sub> at zero percent oxygen:

$$0.312 \text{ ft}^3 / (0.010320 \times 10^6 \text{ wscf}) = 30.2 \text{ ppmv}$$

**Conclusion: Diesel fueled IC Engine exhaust SO<sub>2</sub> concentration of 30.2 ppmv complies with Rule 406 SO<sub>2</sub> limit of 500 ppmv.**

**It is assumed that the SO<sub>2</sub> concentration in natural gas fueled IC engine exhaust gas will be conservatively less than that demonstrated above for diesel combustion:**

**Calculate the CO concentration in boiler exhaust gas using the following assumptions/calculations:**

1. Based on U.S. EPA AP-42; Section 1.4, Table 1.4-2, lists the CO emission factor for natural gas combustion in boilers to be 35 lb CO per  $10^6$  ft<sup>3</sup> of natural gas burned. Assume 1000 Btu / ft<sup>3</sup> of natural gas.
2. From 40 CFR 60 Appendix A, Method 19, the  $F_d$  factor for natural gas is 8710 dscf /  $10^6$  Btu (68 degrees Fahrenheit). Rule 407 specifies the CO concentration on a dry basis.
3. For the purposes of this calculation, excess air will not be considered in calculating the CO concentration (most conservative):

Cubic feet of CO produced per  $10^6$  ft<sup>3</sup> of natural gas burned:  
(35 lb) (1 lb mol / 28 lb) (385 ft<sup>3</sup> / mol) = 481 ft<sup>3</sup> CO (385 ft<sup>3</sup> / mol at 68 degrees Fahrenheit)

Dry cubic feet of combustion gas formed from  $10^6$  ft<sup>3</sup> of natural gas burned:  
( $10^6$  ft<sup>3</sup> gas) (1000 Btu / ft<sup>3</sup>) (8710 dscf /  $10^6$  Btu) = 8,710,000 dscf

CO concentration =  $481 \text{ ft}^3 / 8.71 \times 10^6 \text{ ft}^3 = 55.2 \text{ ppm}$  (most conservative)

**Conclusion: Boiler exhaust CO concentration of 55.2 ppmv complies with Rule 407 CO limit of 2000 ppmv.**

- B.** Rule 409: Owner/Operator shall not discharge into the atmosphere from this facility from the burning of fuel, combustion contaminants exceeding 0.23 gram per cubic meter (0.1 grain per cubic foot) of gas calculated to 12 percent of carbon dioxide (CO<sub>2</sub>) at standard conditions averaged over a minimum of 25 consecutive minutes.  
[Rule 409 - *Combustion Contaminants*; Version in SIP = CARB Ex. Order G-73, 40 CFR 52.220(c)(39)(ii)(C) - 09/08/78 43 FR 40011; Current Rule Version = 07/25/77]

**Calculate the Total Particulate Concentration in the diesel fueled IC engine exhaust gas using the following assumptions/calculations:**

1. Based on U.S. EPA AP-42, Section 3.4, Table 3.4-5, the emission factor for total particulate is 0.0697 lb/ $10^6$  Btu. (= 487.9 grains/ $10^6$  Btu)
2. From 40 CFR 60, Appendix A, Method 19 the  $F_w$  factor for diesel is 10,320 wscf/ $10^6$  Btu (68 degrees Fahrenheit, 0 % excess O<sub>2</sub>). Rule 409 specifies the Particulate concentration at standard conditions, wet, not dry.

For purposes of this calculation, excess air from the combustion process will not be considered in calculating the Particulate concentration & is the most conservative assumption:

Concentration of Particulate at zero percent oxygen:

$$(487.9 \text{ grains}/10^6 \text{ Btu}) / (10,320 \text{ wscf}/10^6 \text{ Btu}) = 0.047 \text{ grain}/\text{ft}^3$$

**Conclusion: Diesel fueled IC Engine exhaust Total Particulate concentration of 0.047 grain per cubic foot complies with Rule 409 limit of 0.1 grain per cubic foot.**

**It is assumed that the Total Particulate concentration in natural gas fueled IC engine exhaust gas will be conservatively less than that demonstrated above for diesel combustion:**

**COPY OF APRIL 29, 1997 COMPLETENESS LETTER:**

April 29, 1997

Dennis C. McBride, Colonel USMC  
Commanding Officer  
Marine Corps Logistics Base, Barstow / Yermo Annex Facility  
Environmental Department, Code B505, Building 3  
Barstow, CA 92311-5013

RE: Federal Operating Permit Application FOP #8700587 for USMC  
Yermo Annex Facility, Barstow, CA. Company Number 0087; Facility  
Number 00587.

Dear Colonel McBride:

Attn: Ms. Suzanne P. Knutson:

The Mojave Desert Air Quality Management District (District) received on March 5, 1997 your application for a Federal Operating Permit for the Yermo Annex Facility located near Barstow, CA. The District has completed the review of your application and has determined that the application is Complete but requests the following clarification information. Please submit two copies each of a facility location map and a facility plot plan which shows the relative locations of permitted equipment. The District will proceed with further processing once this information is submitted.

Your application has been assigned to Mr. Oscar Hellrich. During the permit development process this engineer will be working closely with you to develop the Federal Operating Permit. As part of this process the District may require additional information.

To expedite the issuance process, please reference your facility number and application number on any correspondence. The District wishes to thank Ms. Suzanne Knutson for her cooperation in developing this complete Title V Application. Should you have any questions, please contact the assigned engineer or William Weese, Title V Permit Coordinator at (760) 245-1661, ext. 1864.

Sincerely,

Christopher A. Collins  
Supervising Air Quality Engineer  
CAC/BW/asg  
cc: O. Hellrich